

# Hydric Soils

Essex County, Massachusetts, Southern Part

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
12A:					
Maybid silt loam, 0 to 3 percent slopes	Maybid	85	Depressions, Depressions	Yes	2, 3
	SCITICO	10	Depressions	Yes	2
	SWANSEA	5	Bogs	Yes	1
14B:					
Scitico silt loam, 0 to 5 percent slopes	Scitico	85	Depressions, Drainageways	Yes	2
	MAYBID	8	Depressions	Yes	2, 3
31A:					
Walpole sandy loam, 0 to 3 percent slopes	Walpole	80	Depressions	Yes	2
	Scarboro	10	Outwash terraces	Yes	2, 3
31B:					
Walpole fine sandy loam, 3 to 8 percent slopes	Walpole	85	Drainageways, Terraces	Yes	2
	SCARBORO	5	Terraces	Yes	2, 3
32A:					
Wareham loamy sand, 0 to 3 percent slopes	Wareham	85	Drainageways, Terraces	Yes	2
	SCARBORO	15	Terraces	Yes	2
38A:					
Pipestone loamy fine sand, 0 to 3 percent slopes	SCARBORO	5	Terraces	Yes	2, 3
	WAREHAM	5	Terraces	Yes	2
43A:					
Scarboro mucky fine sandy loam, 0 to 3 percent slopes	Scarboro	80	Depressions, Drainageways	Yes	2, 3
	Swansea	10	Swamps	Yes	1, 3
	Walpole	5	Depressions	Yes	2
	Wareham	5	Depressions	Yes	2

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<b>51A:</b>					
Swansea muck, 0 to 1 percent slopes	Swansea	80	Swamps	Yes	1, 3
	Freetown	10	Swamps	Yes	1, 3
	Scarboro	5	Depressions, Drainageways	Yes	2, 3
	Whitman	5	Depressions, Drainageways	Yes	2, 3
<b>52A:</b>					
Freetown muck, 0 to 1 percent slopes	Freetown	85	Depressions, Depressions	Yes	1, 3
	Scarboro	5	Depressions, Drainageways	Yes	2, 3
	Swansea	5	Depressions, Depressions	Yes	1, 3
	Whitman	5	Depressions, Drainageways	Yes	2, 3
<b>53A:</b>					
Freetown muck, ponded, 0 to 1 percent slopes	Freetown, ponded	85	Depressions, Depressions	Yes	1, 3
	Scarboro	5	Depressions, Drainageways	Yes	2, 3
	Swansea, ponded	5	Depressions, Depressions	Yes	1, 3
	Whitman, ponded	5	Depressions, Ground moraines	Yes	2, 3
<b>70B:</b>					
Ridgebury fine sandy loam, 0 to 3 percent slopes	Ridgebury	85	Depressions	Yes	2
	Whitman	5	Depressions	Yes	2, 3
	Leicester	1	Depressions	Yes	2
<b>71A:</b>					
Ridgebury fine sandy loam, 0 to 3 percent slopes, extremely stony	Ridgebury, extremely stony	85	Depressions	Yes	2
	Whitman, extremely stony	7	Depressions	Yes	2, 3

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71B:					
Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	Ridgebury, extremely stony	80	Depressions	Yes	2
	Whitman, extremely stony	8	Depressions	Yes	2, 3
73A:					
Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	Whitman, extremely stony	81	Depressions	Yes	2, 3
	Ridgebury, extremely stony	10	Depressions	Yes	2
	Scarboro	5	Depressions	Yes	2, 3
	Swansea	3	Swamps	Yes	1, 3
102C:					
Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes	Leicester, extremely stony	1	Depressions	Yes	2
102E:					
Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	Leicester, extremely stony	4	Depressions	Yes	2
220A:					
Boxford silt loam, 0 to 3 percent slopes	SCITICO	10	Depressions	Yes	2
	MAYBID	5	Depressions	Yes	2, 3
220B:					
Boxford silt loam, 3 to 8 percent slopes	SCITICO	10	Depressions	Yes	2
	MAYBID	5	Depressions	Yes	2, 3
220C:					
Boxford silt loam, 8 to 15 percent slopes	SCITICO	10	Depressions	Yes	2
225B:					
Belgrade very fine sandy loam, 0 to 8 percent slopes	OTHER SOILS	5	Depressions	Yes	2
242B:					
Hinckley gravelly fine sandy loam, 3 to 8 percent slopes	SWANSEA	1	Bogs	Yes	1
	WAREHAM	1	Terraces	Yes	2
242E:					
Hinckley loamy sand, 25 to 45 percent slopes, very rocky	Swansea	5	Depressions	Yes	1, 3
256A:					
Deerfield loamy fine sand, 0 to 3 percent slopes	WAREHAM	5	Terraces	Yes	2

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260A: Sudbury fine sandy loam, 0 to 3 percent slopes	WALPOLE	5	Terraces	Yes	2
260B: Sudbury fine sandy loam, 3 to 8 percent slopes	WALPOLE	5	Terraces	Yes	2
300B: Montauk fine sandy loam, 3 to 8 percent slopes	Ridgebury	4	Depressions	Yes	2
300C: Montauk fine sandy loam, 8 to 15 percent slopes	Ridgebury	4	Depressions	Yes	2
301B: Montauk fine sandy loam, 0 to 8 percent slopes, very stony	Ridgebury, very stony	4	Depressions	Yes	2
301C: Montauk fine sandy loam, 8 to 15 percent slopes, very stony	Ridgebury, very stony	4	Depressions	Yes	2
302C: Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony	Ridgebury, extremely stony	2	Depressions	Yes	2
305B: Paxton fine sandy loam, 3 to 8 percent slopes	Ridgebury	6	Depressions	Yes	2
305C: Paxton fine sandy loam, 8 to 15 percent slopes	Ridgebury	2	Depressions	Yes	2
305D: Paxton fine sandy loam, 15 to 25 percent slopes	Ridgebury	1	Depressions	Yes	2
306B: Paxton fine sandy loam, 0 to 8 percent slopes, very stony	Ridgebury, very stony	4	Depressions	Yes	2
306C: Paxton fine sandy loam, 8 to 15 percent slopes, very stony	Ridgebury, very stony	2	Depressions	Yes	2
306D: Paxton fine sandy loam, 15 to 25 percent slopes, very stony	Ridgebury, very stony	1	Depressions	Yes	2
310B: Woodbridge fine sandy loam, 3 to 8 percent slopes	Ridgebury	8	Depressions	Yes	2
310C: Woodbridge fine sandy loam, 8 to 15 percent slopes	Ridgebury	4	Depressions	Yes	2

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311B: Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	Ridgebury, very stony	8	Depressions	Yes	2
311C: Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony	Ridgebury, very stony	4	Depressions	Yes	2
	Whitman, very stony	1	Depressions	Yes	2
311D: Woodbridge fine sandy loam, 15 to 25 percent slopes, very stony	Ridgebury, very stony	2	Depressions	Yes	2
315B: Scituate fine sandy loam, 3 to 8 percent slopes	RIDGEBURY	7	Depressions	Yes	2
	WHITMAN	3	Depressions	Yes	2, 3
316B: Scituate fine sandy loam, 3 to 8 percent slopes, very stony	RIDGEBURY	7	Depressions	Yes	2
	WHITMAN	3	Depressions	Yes	2, 3
316C: Scituate fine sandy loam, 8 to 15 percent slopes, very stony	RIDGEBURY	5	Depressions	Yes	2
317B: Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony	RIDGEBURY	10	Depressions	Yes	2
	WHITMAN	5	Depressions	Yes	2, 3
318B: Scituate fine sandy loam, 3 to 8 percent slopes, extremely bouldery	RIDGEBURY	4	Depressions	Yes	2
318C: Scituate fine sandy loam, 8 to 15 percent slopes, extremely bouldery	RIDGEBURY	10	Depressions	Yes	2
	WHITMAN	5	Depressions	Yes	2, 3
392E: Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	Ridgebury, extremely stony	3	Depressions	Yes	2
420B: Canton fine sandy loam, 3 to 8 percent slopes	Swansea	1	Depressions	Yes	1, 3
420C: Canton fine sandy loam, 8 to 20 percent slopes	SWANSEA	3	Bogs	Yes	1

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421B: Canton fine sandy loam, 0 to 8 percent slopes, very stony	Swansea	2	Depressions	Yes	1, 3
421C: Canton fine sandy loam, 8 to 15 percent slopes, very stony	Swansea	1	Depressions	Yes	1, 3
422B: Canton fine sandy loam, 0 to 8 percent slopes, extremely stony	Swansea	4	Depressions	Yes	1, 3
602: Urban land	WHITMAN	3	Depressions	Yes	2, 3
	FREETOWN	1	Bogs	Yes	1
	MAYBID	1	Depressions	Yes	2, 3
	SCARBORO	1	Terraces	Yes	2, 3
	SWANSEA	1	Bogs	Yes	1
	Whately variant	1	Glacial lakes (relict)	Yes	2
607: Water, saline	Westbrook	5	Marshes	Yes	1, 3
616A: Fluvaquents, frequently flooded, 0 to 3 percent slopes	Fluvaquents	85	Alluvial flats	Yes	2
	SWANSEA	10	Bogs	Yes	1
620B: Boxford-Urban land complex, gently sloping	SCITICO	5	Depressions	Yes	2
	SHAKER	5	Depressions	Yes	2
622C: Paxton-Urban land complex, 3 to 15 percent slopes	Ridgebury	1	Depressions	Yes	2
628C: Canton-Urban land complex, sloping	RIDGEBURY	3	Depressions	Yes	2
	WHITMAN	3	Depressions	Yes	2, 3
	SWANSEA	2	Bogs	Yes	1

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<b>652:</b>					
Udorthents, refuse substratum	RIDGEBURY	2	Depressions	Yes	2
	SCARBORO	1	Terraces	Yes	2, 3
	WALPOLE	1	Terraces	Yes	2
	WHITMAN	1	Depressions	Yes	2, 3
<b>702C:</b>					
Udipsamments, rolling	IPSWICH	2	Marshes	Yes	1, 3
	SCARBORO	2	Terraces	Yes	2, 3
	WESTBROOK	2	Marshes	Yes	1, 3
<b>712A:</b>					
Ipswich and Westbrook mucky peats, 0 to 2 percent slopes, very frequently flooded	Ipswich	55	Tidal marshes	Yes	1
	Westbrook	30	Tidal marshes	Yes	1
	Pawcatuck	15	Tidal marshes	Yes	1
<b>714A:</b>					
Melrose fine sandy loam, 0 to 3 percent slopes	SHAKER	5	Depressions	Yes	2
<b>714B:</b>					
Melrose fine sandy loam, 3 to 8 percent slopes	SHAKER	5	Depressions	Yes	2
<b>720A:</b>					
Whately Variant mucky fine sandy loam, 0 to 1 percent slopes	Whately variant	85	Depressions, Drainageways	Yes	2
	SHAKER	10	Depressions	Yes	2
	SWANSEA	5	Bogs	Yes	1
<b>722B:</b>					
Annisquam fine sandy loam, 3 to 8 percent slopes, extremely bouldery	RIDGEBURY	3	Depressions	Yes	2
<b>722C:</b>					
Annisquam fine sandy loam, 8 to 15 percent slopes, extremely bouldery	RIDGEBURY	2	Depressions	Yes	2
<b>722E:</b>					
Annisquam fine sandy loam, 15 to 35 percent slopes, extremely bouldery	RIDGEBURY	1	Depressions	Yes	2

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723A: Elmridge fine sandy loam, 0 to 3 percent slopes	SHAKER	10	Depressions	Yes	2
723B: Elmridge fine sandy loam, 3 to 8 percent slopes	SHAKER	5	Depressions	Yes	2
724C: Hollis-Urban land-Rock outcrop complex, sloping	RIDGEBURY	2	Depressions	Yes	2
	WHITMAN	2	Depressions	Yes	2, 3
725A: Shaker fine sandy loam, 0 to 3 percent slopes	Shaker	85	Depressions, Depressions	Yes	2
	Whately variant	10	Depressions	Yes	2
725B: Shaker fine sandy loam, 3 to 8 percent slopes	Shaker	85	Depressions, Depressions	Yes	2
	Whately variant	10	Depressions	Yes	2



## Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folist.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
  - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
  - B. are poorly drained or very poorly drained and have either:
    - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
    - 2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
    - 3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

### References:

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
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- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.